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REMARKS

Claims 1-28 are pending in the present application. Claim 24-26 have been canceled, and Claims 29-30 have been added, leaving Claims 1-23 and 27-30 for consideration upon entry of the present Amendment.

New Claims 29 and 30 are original Claims 25 and 26, respectively, rewritten in independent from including the limitations of base Claim 24.

No new matter has been introduced by these amendments. Reconsideration and allowance of the claims is respectfully requested in view of the above amendments and the following remarks.

Claim Rejections Under 35 U.S.C. §102(b)

Claims 1, and 3-5 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent 5,942,350 to Roy et al. Applicants respectfully traverse this rejection.

Independent Claim 1 is directed to a membrane electrode assembly comprising, *inter alia*, "a membrane disposed between the first electrode and the second electrode, the membrane comprising a substrate providing support to the first electrode and the second electrode, the substrate being contiguously disposed at a first frame."

Roy et al. teach an electrolysis cell in which graded hardware components are disposed between a pressure pad and a membrane. (Column 5, lines 10-14). The graded hardware components include a substrate of steel having a precious metal surface layer. (Column 6, line 18-25). Additionally, graded hardware component also includes fluid entry passages for allowing water to enter the cavity of the cell. (Column 5, lines 40-45).

To anticipate a claim, a reference must disclose each and every element of the claim. *Lewmar Marine v. Varient Inc.*, 3 U.S.P.Q.2d 1766 (Fed. Cir. 1987).

In making the anticipation rejection, the Examiner appears to have misconstrued the claims, e.g., Claim 1. In Claim 1, Applicants claim "the membrane comprising a substrate." In other words, the substrate is part of the membrane. Even though the claims are clear on their face, Applicants direct the Examiner's attention to page 8, lines 9-15 of the specification in interpreting the claims, which states, for example, the "proton exchange material is disposed on substrate 62 via dipping, spraying, vapor deposition, brushing or similar operation. Alternatively, ...the proton exchange material can be mixed into the particulate material prior to

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the pressing operation or the molding operation.” The substrate is part of the membrane as claimed.

In contrast to Applicants’ Claim 1, Roy et al. teach a substrate support that is external to the membrane. See Figures 1-3. In other words, Roy et al. do not teach a “membrane comprising a substrate.” Furthermore, Applicants submit that a comparable component to the graded hardware component of Roy et al. found in Applicants’ application would be flow field support member 52. Since Roy et al. at least do not teach a “membrane comprising a substrate,” Roy et al. do not teach each and every element of Applicants’ independent Claim 1. As such, the anticipation rejection is improper. Moreover, as a dependent claim from an allowable independent claim, Claims 2-5 are, by definition, also allowable.

Claim Rejections Under 35 U.S.C. §102(e)

Claims 1-6, 8-12, 14, 16-19, 23, 24, 27, and 28 stand rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent 6,427,639 to Andrews et al. Applicants respectfully traverse this rejection.

Andrews et al. teach an electrolysis cell having an anode substrate adjacent to a proton exchange membrane and a cathode substrate adjacent to the membrane opposite the anode substrate. (Column 6, lines 18-27, Figure 2).

With regard to Claim 1, Andrews et al. at least fail to teach, “a membrane disposed between the first electrode and the second electrode, the membrane comprising a substrate providing support to the first electrode and the second electrode, the substrate being contiguously disposed at a first frame.” Instead, Andrews et al. teach a separate substrate to support each electrode. Moreover, as discussed in relation to Roy et al., the substrates of Andrews et al. are not part of the membrane. As such, Andrews et al. do not teach each and every element of Applicants independent Claim 1. Since Andrews et al. at least do not teach a “membrane comprising a substrate”, Claim 1 is not anticipated. Moreover, as a dependent claim from an allowable independent claim, Claims 2-6 are by definition, also allowable.

With respect to independent Claim 8, the Examiner states, “Andrews et al. disclose a frame and a substrate in contiguous contact with the frame having a proton exchange membrane thereon.” (Paper 8, page 3). Applicants respectfully disagree.

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Andrews et al. teach an electrolysis cell having a frame, a substrate and a proton exchange membrane. These components of the electrolyzer are stacked together and retained by a plurality of tie rods. (Column 6, lines 34-38). Applicants' Claim 8 in contrast claims a membrane comprising a frame, substrate in contiguous contact with the frame and proton exchange material disposed at the substrate. Andrews et al. do not teach a membrane incorporating all the limitations of Claim 8. Accordingly, Applicants respectfully assert that independent Claim 8 is not anticipated. Moreover, as a dependent claim from an allowable independent claim, Claims 9-12, 14, and 16-17 are, by definition, also allowable.

With respect to Claim 18, the Examiner states, "Andrews et al. disclose a frame in contiguous contact with a plate that comprises a number of flow ports (Figure 2, Col. 6, lines 11-13." (Paper 8, page 4). The section of the specification of Andrews et al. cited by the Examiner teaches a frame having ports therein. Claim 18, however, claims a plate in contiguous contact with the frame, the plate including a channel disposed thereat and configured to receive a fluid to transfer heat from the cell. Applicants respectfully assert that the Andrews et al. do not teach or show a plate having a channel as claimed by Applicants' Claim 18. Since Andrews et al. at least fail to teach the "plate including a channel", Andrews et al. do not teach each and every element of Applicants independent Claim 18. Accordingly, Applicants respectfully assert that Claim 18 is not anticipated. Moreover, as a dependent claim from an allowable independent claim, Claims 19, and 23 are, by definition, also allowable.

With respect to Claim 24, the rejection is moot, as Claim 24 has been cancelled. The limitations of Claim 24 have been added to Claims 25 and 26, which had depended therefrom. New Claims 29 and 30 are Claims 25 and 26, respectively, rewritten in independent form incorporating the limitation of their base Claim 24. Accordingly, Applicants submit that new Claims 29 and 30 are allowable.

With respect to Claim 27, the Examiner states, "Andrews et al. disclose an electrochemical cell comprising a membrane disposed [sic] two electrodes wherein the membrane has an integrated proton exchange material and a substrate in contiguous contact with a frame." (Paper 8, page 4). Applicants respectfully disagree.

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Andrews et al. show a cathode substrate, a membrane, and an anode substrate. (Column 6, lines 16-26). Claim 27 in contrast claims a membrane comprising an integrated proton exchange material and a substrate. Additionally, Claim 27 claims, "the membrane disposed between the first and the second electrode". Applicant respectfully submits that the membrane taught by Andrews et al. do not include an integrated proton exchange material and a substrate. Since Andrews et al. at least fail to teach a membrane comprising an "integrated proton exchange material and substrate", Andrews et al. do not teach each and every element of Applicants' independent Claim 27. As such, independent Claim 27 is not anticipated. Moreover, as a dependent Claim from an allowable independent claim, Claim 28 is, by definition, also allowable.


For at least the foregoing reasons, Applicants respectfully request withdrawal of these rejections.

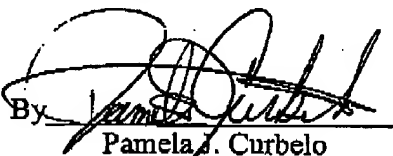
It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and allowance is requested.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 06-1130.

Respectfully submitted,

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